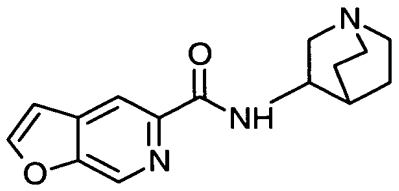
Claimed:

1. A fumarate salt of compound of the Formula I:



Formula I

or pharmaceutical composition, racemic mixture, or pure enantiomer thereof, provided that the salt is the fumarate salt thereof.

2. The salt of claim 1, wherein the compound is a mono-fumarate salt of N-[(3*R*)-1-azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide.

3. The salt of claim 2, wherein the salt is crystalline further having characteristic diffraction peaks at 18.90 and 24.97 degrees two-theta in a powder X-ray diffratction pattern.

4. The salt of claim 3, wherein the crystals have characteristic powder X-ray diffratction diffraction peaks at 18.21, 18.90, 21.74, and 24.97 degrees two-theta.

5. The salt of claim 2, wherein the salt has less than 0.3% water.

6. The salt of claim 5, wherein the salt has less than 0.2% water.

7. The salt of claim 6, wherein the salt has less than 0.1% water.

8. The salt of claim 1, wherein the compound is a hemi-fumarate salt of N-[(3*R*)-1-azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide.

9. The salt of claim 8, wherein the salt is crystalline further having characteristic diffraction peaks at 19.84 and 24.83 degrees two-theta in a powder X-ray diffraction pattern.

10. The salt of claim 9, wherein the crystals have characteristic powder X-ray diffraction diffraction peaks 17.59, 18.43, 19.84, 22.74, and 24.83 degrees two-theta in a powder X-ray diffraction pattern.

11. The salt of claims 8, wherein the salt has less than 0.3% water.

12. The salt of claim 11, wherein the salt has less than 0.2% water.

13. The salt of claim 12, wherein the salt has less than 0.1% water.

14. A pharmaceutical composition comprising the fumarate salt of claim 1, and optionally an anti-psychotic agent.

15. A method for treating a disease or condition in a mammal in need thereof, wherein the mammal would receive symptomatic relief from the administration of a therapeutically effective amount of α7 nicotinic acetylcholine receptor agonist of claim 1.

16. The method of claim 15, wherein the salt is the mono-fumarate.

17. The method of claim 15, wherein the salt is the hemi-fumarate.

18. The method of claim 15, wherein the disease or condition is cognitive and attention deficit symptoms of Alzheimer's, neurodegeneration associated with diseases such as Alzheimer's disease, pre-senile dementia (mild cognitive impairment), senile dementia, schizophrenia, psychosis attention deficit disorder, attention deficit hyperactivity disorder, mood and affective disorders, amyotrophic lateral sclerosis, borderline personality disorder, traumatic brain injury, behavioral and cognitive problems associated with brain tumors, AIDS dementia complex, dementia associated with Down's syndrome, dementia associated with Lewy Bodies, Huntington's disease, depression, general anxiety disorder, age-related macular degeneration, Parkinson's disease, tardive dyskinesia, Pick's disease, post traumatic stress disorder, dysregulation of food intake including bulemia and anorexia nervosa,

withdrawal symptoms associated with smoking cessation and dependant drug cessation, Gilles de la Tourette's Syndrome, glaucoma, neurodegeneration associated with glaucoma, or symptoms associated with pain.

19. The method of claim 18, wherein the salt is the mono-fumarate.

20. The method of claim 18, wherein the salt is the hemi-fumarate.

21. A preparation of mono-fumarate salt, comprising dissolving the free base in an alcohol by heating;

adding at least 1 eq of fumaric acid;

precipitating the salt out of solution; and

collecting, optionally washing the salt, and drying the salt.

22. The preparation of claim 21, further comprising that the alcohol is methanol or ethanol using a sufficient amount to give a concentration from about 0.04M to about 1M by heating.

23. The preparation o claim 21, further comprising that the alcohol is isopropanol using a sufficient amount to give a concentration of about 0.1M to about 1M.

24. The preparation of claim 23, further comprising the combining of the free base solution with a solution of at least 1 eq of fumaric acid dissolved in a second alcohol, optionally methanol or ethanol, to give a concentration of about 2M to about 5M, and further compsrising the addition of acetone to give a final concentration of about 0.1M to about 0.5M after the acid and free base solutions are combined.

25. The preparation of claim 24, further comprising a second addition of acetone to give a final concentration of about 0.05 M to about 0.2M after about 1 to about 3 hours after the first addition of acetone, and further comprising the collection of the solid, optionally collection after about 8-24 hours of stirring, and optionally washing the resultant solid with acetone.

26. The preparation of claim 21, further comprising n-butanol as the alcohol using a sufficient amount to give a solution of about 0.6M to about 0.8M.

27. The preparation of claim 26, further comprising the addition of the free-base solution to a solution of about 0.35M to about 0.45M of at least 1 eq fumaric acid in 30 % water/acetone.

28. The preparation of claim 27, further comprising concentrating the reaction to about 0.55M to about 0.75M, and further comprising the addition of sufficient amount of n-butanol to give a concentration of the free base from about 0.4M to about 0.6M.

29. The preparation of claim 21, wherein the salt has less than 0.3% water.

30. The preparation of claim 29, wherein the salt has less than 0.2% water.

31. The preparation of claim 30, wherein the salt has less than 0.1% water.

32. A preparation of hemi-fumarate salt, comprising dissolving the free base in an alcohol;

adding a solution of about 0.5 eq of fumaric acid dissolved in an alcohol;

adding the acid solution to the free-base solution;

collecting, optionally washing the salt, and drying the salt.

33. The preparation of claim 32, further comprising that the alcohol is isopropanol (IPA) at approximately 9 wt% by heating.

34. The preparation of claim 33, further comprising dissolving approximately 0.5 molar equivalents of fumaric acid in IPA by heating to approximately 70°C to give a final concetration of about 2.8 wt%.

35. The preparation of claim 34, further comprising the combining of the free-base solution and the fumaric acid solution while maintaining the temperature.

36. The preparation of claim 35, further comprising allowing the system to cool to room temperature, filtering off the resulting solid, washing the solid with IPA and drying the solid.